



Big Valley Rancheria
Environmental Protection Department

Checklist for Lab and Field Data Entry

Water monitoring team please fill out asterisked * lines and attach this to the sampling packet

*Title of Sampling Event: Clear Lake HAB Monitoring

*PROJECT ID: HABs

*ACTIVITY ID NUMBERS: 1819-1839

*Sampling Date: 10/14/22

Field Data

- Hard Copy → WQX Format - Finish Date: _____
- BVR Template → WQX Web Submission Date: _____
 - Transaction ID: _____

Lab Data

*Lab Name: Bend Genetics

*Analysis Requested: various toxin & g PCR analysis

*Activity ID's: 1819-1839

Print Date: _____ → BVR Template Finish Date: _____

- BVR Template → WQX Web Submission Date: _____
 - Transaction ID: _____

*Lab Name: _____

*Analysis Requested: _____

*Activity ID's: _____

Print Date: _____ → BVR Template Finish Date: _____

- BVR Template → WQX Web Submission Date: _____
 - Transaction ID: _____

*Lab Name: _____

*Analysis Requested: _____

*Activity ID's: _____

Print Date: _____ → BVR Template Finish Date: _____

- BVR Template → WQX Web Submission Date: _____
 - Transaction ID: _____

Notes:

All Data Entered and Exported:

Signature: _____ Date: _____



Big Valley Rancheria
Environmental Department
Sampling Event Log

Title of Sampling Event: Clear Lake HAB Monitoring

PROJECT ID: HABs

ACTIVITY ID NUMBERS: _____

Date: 10/14/22

Sampling Start Time: 0700

Sampling End Time: 1400

Lake Level (From USGS Lakeport Gauge): -0.25ft

Sampling Team Members

Alix Tyler

Luis Santana

Level of Safety Protection (circle one)

- None
- New gloves at each sampling point
- Other

SOPs (circle all that apply)

- Surface Water Sampling
- Sediment Sampling
- Other

Type of measurements occurring during this sampling event (circle all that apply)

- Field Measurement (Data observation via Hydrolab/equipment)
- Sample – Routine (Collection used to send for lab analyses)
- Sample – Other (Quality control only)

Field equipment calibration list

DO probe

- Calibrated with barometric pressure
- Time Completed: 0600
- BP: 763 mmHg 30.06inHg

pH probe

- Calibrated to 7 and 10
- Time Completed: 0604

Conductivity Probe

- Calibrated to 2764 μ S/cm
- Time Completed: 0600

Calibration of equipment successful?

- Yes or NO – circle one

Comments

For additional information see the **Sampling Location Information Log**

Big Valley Rancheria

Environmental Protection Department

Clear Lake Water Quality & Cyanobacteria Field Sheet



Site: BVCL6	Activity ID:	Site: CP	Activity ID:
Date: 6/14/22	Time: 0715	Date: 6/14/22	Time: 0733
Temp,Air (deg F)	50	Temp,Air (deg F)	55
Temp,Water (deg C)	19.68	Temp,Water (deg C)	20.167
Activity depth (m) [0.5 m]	0.526	Activity depth (m) [0.5 m]	0.258
SpC (mS/cm)	0.3279	SpC (mS/cm)	0.3338
Resistivity (KOhm/cm)	3.049	Resistivity (KOhm/cm)	3.003
Salinity (ppt)	0.16	Salinity (ppt)	0.16
Total dissolved solids (g/L)	0.2099	Total dissolved solids (g/L)	0.2136
Dissolved oxygen saturation (%)	90.9	Dissolved oxygen saturation (%)	102.5
Dissolved oxygen (mg/L)	8.34	Dissolved oxygen (mg/L)	9.29
pH (none)	10.13	pH (none)	9.46
Turbidity (NTU)	12.1	Turbidity (NTU)	5.5
Chlorophyll a (µg/L)	16.18	Chlorophyll a (µg/L)	5.04
Phycocyanin (cells/ml)	634	Phycocyanin (cells/ml)	985
Comments: Shady w/ slight breeze, no visible bloom, no odor, grebes + geese present, potamageton + g. algae on shoreline, Sam 30-40 dead clams as previous sampling event.		Comments: sunny w/ a slight breeze, No visible bloom, no odor, 40-50 dead clams, grebes + swallows present, potamageton + willows on shoreline	
Site: CLV7	Activity ID:	Site: HB	Activity ID:
Date: 6/14/22	Time: 0752	Date: 6/14/22	Time: 0814
Temp,Air (deg F)	55	Temp,Air (deg F)	59
Temp,Water (deg C)	21.43	Temp,Water (deg C)	21.72
Activity depth (m) [0.5 m]	0.580	Activity depth (m) [0.5 m]	0.703
SpC (mS/cm)	0.4404	SpC (mS/cm)	0.4022
Resistivity (KOhm/cm)	2.272	Resistivity (KOhm/cm)	2.489
Salinity (ppt)	0.21	Salinity (ppt)	0.19
Total dissolved solids (g/L)	0.2819	Total dissolved solids (g/L)	0.2571
Dissolved oxygen saturation (%)	21.8	Dissolved oxygen saturation (%)	82.8
Dissolved oxygen (mg/L)	1.93	Dissolved oxygen (mg/L)	7.29
pH (none)	7.32	pH (none)	8.19
Turbidity (NTU)	2.6	Turbidity (NTU)	0.9
Chlorophyll a (µg/L)	3.58	Chlorophyll a (µg/L)	5.98
Phycocyanin (cells/ml)	325	Phycocyanin (cells/ml)	284
Comments: No visible bloom, no odor, g. algae, sunny w/ slight breeze, lemma covering shoreline, gloeotrichia present, No waterfowl, 1 dead goldfish		Comments: No visible bloom, no odor, breezy, clean water lots of curly leaf pondweed, sunny, ran down used	

Environmental Protection Department
Clear Lake Water Quality & Cyanobacteria Field Sheet


Site: BP	Activity ID:	Site: JB	Activity ID:
Date: 6/14/22	Time: 0831	Time: 0859	Pictures? ✓
Temp,Air (deg F)	57	Date: 6/14/22	Temp,Air (deg F)
Temp,Water (deg C)	20.34	Time: 0945	163
Activity depth (m) [0.5 m]	0.452	Temp,Water (deg C)	21.01
SpC (mS/cm)	.4027	Activity depth (m) [0.5 m]	0.459
Resistivity (KOhm/cm)	2.483	SpC (mS/cm)	0.4145
Salinity (ppt)	0.19	Resistivity (KOhm/cm)	2.049
Total dissolved solids (g/L)	0.2590	Salinity (ppt)	0.20
Dissolved oxygen saturation (%)	117.5	Total dissolved solids (g/L)	0.2653
Dissolved oxygen (mg/L)	10.54	Dissolved oxygen saturation (%)	87.7
pH (none)	8.34	Dissolved oxygen (mg/L)	7.82
Turbidity (NTU)	28.5	pH (none)	8.14
Chlorophyll a (µg/L)	63.67	Turbidity (NTU)	116.4
Phycocyanin (cells/ml)	3028	Chlorophyll a (µg/L)	3.07
Comments: No visible bloom, no odor, slight breeze, lots of grebes, g. algae x No clams or mussels present		Phycocyanin (cells/ml)	10710
Comments: Visible bloom, no odor, bloom on shoreline, sunny w/ slight breeze, No wildlife, No clams or mussels, g. algae on rocks		Comments: Visible bloom, no odor, bloom on shoreline, sunny w/ slight breeze, No wildlife, No clams or mussels, g. algae on rocks	
Site: SHADYO1	Activity ID:	Site: REDO1	Activity ID:
Date: 6/14/22	Time: 0930	Date: 6/14/22	Time: 0945
Temp,Air (deg F)	64	Time: Pictures? ✓	Pictures? ✓
Temp,Water (deg C)	23.07	Temp,Air (deg F)	164
Activity depth (m) [0.5 m]	0.637	Temp,Water (deg C)	20.54
SpC (mS/cm)	0.4068	Activity depth (m) [0.5 m]	0.379
Resistivity (KOhm/cm)	2.401	SpC (mS/cm)	0.3934
Salinity (ppt)	6.20	Resistivity (KOhm/cm)	2.539
Total dissolved solids (g/L)	0.2600	Salinity (ppt)	0.19
Dissolved oxygen saturation (%)	43.9	Total dissolved solids (g/L)	0.2517
Dissolved oxygen (mg/L)	3.83	Dissolved oxygen saturation (%)	99.4
pH (none)	8.18	Dissolved oxygen (mg/L)	9.02
Turbidity (NTU)	19.0	pH (none)	9.00
Chlorophyll a (µg/L)	28.84	Turbidity (NTU)	83.0
Phycocyanin (cells/ml)	1727	Chlorophyll a (µg/L)	5.94
Comments: No visible bloom, no odor, but cyanob is present, primrose + curly-leaf pondweed, sunny, breezy		Phycocyanin (cells/ml)	16674
Comments: Bad bloom heavy odor, sunny, lots of grebes + ducks (w/ babies), breezy, curly leaf pondweed		Comments: Bad bloom heavy odor, sunny, lots of grebes + ducks (w/ babies), breezy, curly leaf pondweed	



Clear Lake Water Quality & Cyanobacteria Field Sheet

Big Valley Rancheria
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Site: APOL	Activity ID:	Site: LCO1	Activity ID:
Date: 10/14/22	Time: 1000	Date: 10/14/22	Time: 1022
Temp,Air (deg F)	66	Temp,Air (deg F)	66
Temp, Water (deg C)	21.10	Temp, Water (deg C)	20.92
Activity depth (m) [0.5 m]	0.512	Activity depth (m) [0.5 m]	0.737
SpC (mS/cm)	0.4075	SpC (mS/cm)	0.4132
Resistivity (KOhm/cm)	2.452	Resistivity (KOhm/cm)	2.420
Salinity (ppt)	0.20	Salinity (ppt)	0.20
Total dissolved solids (g/L)	0.2608	Total dissolved solids (g/L)	0.2645
Dissolved oxygen saturation (%)	141.2	Dissolved oxygen saturation (%)	75.6
Dissolved oxygen (mg/L)	13.01	Dissolved oxygen (mg/L)	16.72
pH (none)	8.516	pH (none)	8.03
Turbidity (NTU)	47.0	Turbidity (NTU)	10.0
Chlorophyll a (µg/L)	3.103	Chlorophyll a (µg/L)	4.15
Phycocyanin (cells/ml)	slight odor 11848	Phycocyanin (cells/ml)	780
Comments: Visible bloom - No odor, mallards on shoreline, build-up of foam + mat material on shoreline, sunny, windy	Comments: visible bloom, slight odor, mallards present, sunny w/ slight breeze, mats on shoreline		
Site: ELEM01	Activity ID: Spoke to Jim Brown	Site: SBSMUEL01	Activity ID:
Date: 10/14/22	Time: 1059	Date: 10/14/22	Time: 1115
Temp,Air (deg F)	68	Temp,Air (deg F)	70
Temp, Water (deg C)	21.94	Temp, Water (deg C)	22.70
Activity depth (m) [0.5 m]	0.520	Activity depth (m) [0.5 m]	0.362
SpC (mS/cm)	0.3905	SpC (mS/cm)	0.2883
Resistivity (KOhm/cm)	2.543	Resistivity (KOhm/cm)	2.580
Salinity (ppt)	0.19	Salinity (ppt)	0.19
Total dissolved solids (g/L)	0.2490	Total dissolved solids (g/L)	0.2488
Dissolved oxygen saturation (%)	154.7	Dissolved oxygen saturation (%)	181.9
Dissolved oxygen (mg/L)	13.68	Dissolved oxygen (mg/L)	15.61
pH (none)	8.48	pH (none)	8.85
Turbidity (NTU)	46.7	Turbidity (NTU)	764.4
Chlorophyll a (µg/L)	625	Chlorophyll a (µg/L)	24.17
Phycocyanin (cells/ml)	2028	Phycocyanin (cells/ml)	88317
Comments: Bloom visible, no odor, sunny, windy, lots of wave action, sunny, no visible wildlife, willows on shoreline, gulls on rock s, foam on shoreline	Comments: Heavy bloom, no odor, foam + mat material on shoreline, very windy, lots of wave action, sunny, no visible wildlife		

Big Valley Rancheria

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Clear Lake Water Quality & Cyanobacteria Field Sheet
**Site: KEYSO3****Activity ID:****Site: CLOAKSO1****Activity ID:****Date: 10/14/22****Date: 10/14/22****Date: 10/14/22****Date: 10/14/22****Time: 1140****Time: 1159****Time: 1159****Pictures? ✓****Pictures? ✓****Pictures? ✓****Temp,Air (deg F)****Temp,Air (deg F)****Temp,Air (deg F)****72****72****73****Temp,Water (deg C)****Temp,Water (deg C)****Temp,Water (deg C)****21.62****22.01***** 0.322 - depth was off more than 5****Activity depth (m) [0.5 m]****Activity depth (m) [0.5 m]****Activity depth (m) [0.5 m]****0.268*********0.3915****SpC (mS/cm)****SpC (mS/cm)****SpC (mS/cm)****0.6137****1.628****2.555****Resistivity (KOhm/cm)****Resistivity (KOhm/cm)****Resistivity (KOhm/cm)****0.30****0.30****0.19****Salinity (ppt)****Salinity (ppt)****Salinity (ppt)****Total dissolved solids (g/L)****Total dissolved solids (g/L)****Total dissolved solids (g/L)****0.3930****0.3930****0.2502****Dissolved oxygen saturation (%)****Dissolved oxygen saturation (%)****Dissolved oxygen saturation (%)****76.8****68.81****147.0****Dissolved oxygen (mg/L)****Dissolved oxygen (mg/L)****Dissolved oxygen (mg/L)****pH (none)****pH (none)****pH (none)****Turbidity (NTU)****Turbidity (NTU)****Turbidity (NTU)****36.7****68.59****40.7****Chlorophyll a (µg/L)****Chlorophyll a (µg/L)****Chlorophyll a (µg/L)****2605****4.93****11419****Phycocyanin (cells/ml)****Phycocyanin (cells/ml)****Phycocyanin (cells/ml)****Comments: van Horn used, No visible bloom, no odor, sunny, brownish water, Lemma & primrose****Comments: No visible bloom but cyano present, sunny, breezy, fisherman present, No clams or mussels, mallards present****Comments: No visible bloom, no odor, lots of benthic algae, sunny, slight breeze, grebes, & gulls in water**

Site: G-H	Activity ID:	Site: LUC01	Activity ID:
Date: 10/14/22	Time: 1221	Date: 10/14/22	Time: 1250
Temp,Air (deg F)	Temp,Air (deg F)	Temp,Air (deg F)	Temp,Air (deg F)
Temp,Water (deg C)	Temp,Water (deg C)	Temp,Water (deg C)	Temp,Water (deg C)
Activity depth (m) [0.5 m]	Activity depth (m) [0.5 m]	Activity depth (m) [0.5 m]	Activity depth (m) [0.5 m]
SpC (mS/cm)	SpC (mS/cm)	SpC (mS/cm)	SpC (mS/cm)
Resistivity (KOhm/cm)	Resistivity (KOhm/cm)	Resistivity (KOhm/cm)	Resistivity (KOhm/cm)
Salinity (ppt)	Salinity (ppt)	Salinity (ppt)	Salinity (ppt)
Total dissolved solids (g/L)	Total dissolved solids (g/L)	Total dissolved solids (g/L)	Total dissolved solids (g/L)
Dissolved oxygen saturation (%)	Dissolved oxygen saturation (%)	Dissolved oxygen saturation (%)	Dissolved oxygen saturation (%)
Dissolved oxygen (mg/L)	Dissolved oxygen (mg/L)	Dissolved oxygen (mg/L)	Dissolved oxygen (mg/L)
pH (none)	pH (none)	pH (none)	pH (none)
Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)	Turbidity (NTU)
Chlorophyll a (µg/L)	Chlorophyll a (µg/L)	Chlorophyll a (µg/L)	Chlorophyll a (µg/L)
Phycocyanin (cells/ml)	Phycocyanin (cells/ml)	Phycocyanin (cells/ml)	Phycocyanin (cells/ml)
Comments: No visible bloom, no odor, sunny + breezy, grebes in distance, potamagetan on shoreline, lots of benthic algae			



Big Valley Rancheria
Environmental Protection Department

Clear Lake Water Quality & Cyanobacteria Field Sheet

Site: KPO1	Activity ID:	Site: RQDS	Activity ID:
Date: 10/14/22	Time: 13:08	Date: 10/14/22	Time: 13:23
Temp,Air (deg F)	Pictures? <input checked="" type="checkbox"/>	Temp,Air (deg F)	Pictures? <input checked="" type="checkbox"/>
Temp,Water (deg C)	75	Temp,Water (deg C)	75
Activity depth (m) [0.5 m]	23.34	Activity depth (m) [0.5 m]	22.24
SpC (mS/cm)	0.528	SpC (mS/cm)	0.590
Resistivity (KOhm/cm)	0.3711	Resistivity (KOhm/cm)	0.2346
Salinity (ppt)	2.492	Salinity (ppt)	4.257
Total dissolved solids (g/L)	0.18	Total dissolved solids (g/L)	0.11
Dissolved oxygen saturation (%)	6.2380	Dissolved oxygen saturation (%)	0.504
Dissolved oxygen (mg/L)	177.0	Dissolved oxygen (mg/L)	92.0
pH (none)	15.07	pH (none)	8.05
Turbidity (NTU)	* 193.1 turbidity probe # jumping	Turbidity (NTU)	8.90
Chlorophyll a (µg/L)	1.35	Chlorophyll a (µg/L)	4.1
Phycocyanin (cells/ml)	3341	Phycocyanin (cells/ml)	1.29
Comments: No visible bloom, no odor, Lots of benthic algae, sunny w/ breeze, bass + mosquito fish present, no mussels or clams, dog jumping / diving in water,		Comments: No visible bloom, no odor, sunny, breezy, lots of surface green algae, small brown mosquito fish, no clams or mussels present, lots of creeping primrose	195
Site: LPINT	Activity ID:	Site:	Activity ID:
Date: 10/14/22	Time: 13:42	Date:	Time:
Temp,Air (deg F)	79	Temp,Air (deg F)	Pictures? <input checked="" type="checkbox"/>
Temp,Water (deg C)	24.74	Temp,Water (deg C)	
Activity depth (m) [0.5 m]	0.418	Activity depth (m) [0.5 m]	
SpC (mS/cm)	0.3219	SpC (mS/cm)	
Resistivity (KOhm/cm)	3.109	Resistivity (KOhm/cm)	
Salinity (ppt)	0.16	Salinity (ppt)	
Total dissolved solids (g/L)	0.2061	Total dissolved solids (g/L)	
Dissolved oxygen saturation (%)	127.9	Dissolved oxygen saturation (%)	
Dissolved oxygen (mg/L)	10.74	Dissolved oxygen (mg/L)	
pH (none)	10.04	pH (none)	
Turbidity (NTU)	2.1	Turbidity (NTU)	
Chlorophyll a (µg/L)	6.80	Chlorophyll a (µg/L)	
Phycocyanin (cells/ml)	934	Phycocyanin (cells/ml)	
Comments: No visible bloom, no odor, potamageton all along shoreline & lake, sunny, breezy	Comments:		

CYANOBACTERIA CELL ID AND ABRAXIS RESULTS SHEET

SITE
NAME

DOMINANT
GENUS

OTHER OBSERVED

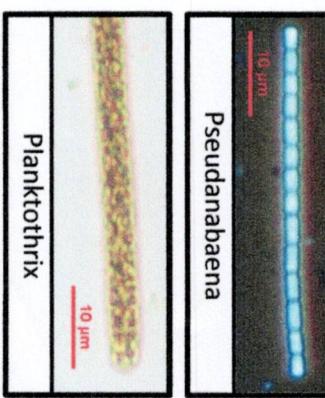
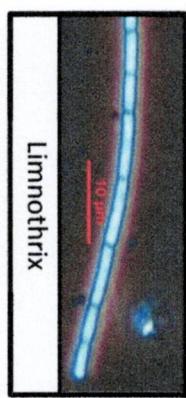
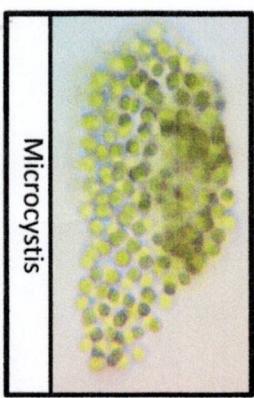
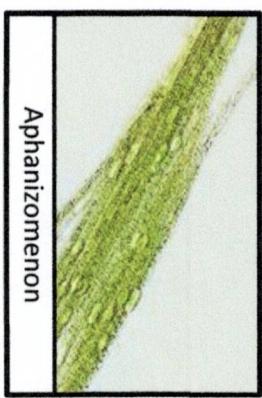
MC (ppb) ATX (ppb) CYL (ppb)

SEND TO LAB?

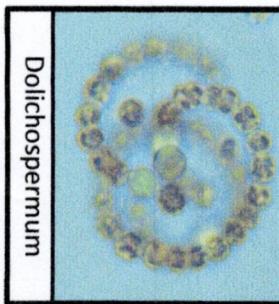
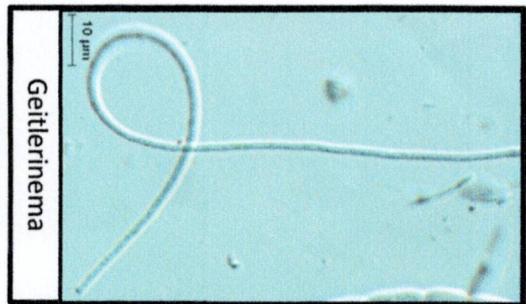
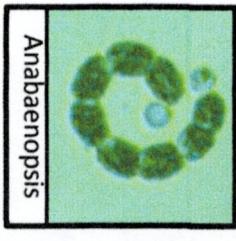
DATE: 10/15/22

MICROSCOPY REVIEWERS: Alix Tyler

BYC00	Gloeostrichia	Diatoms			mc 8PCR	No
CP	Benthic Anabaena	Diatoms			Yes - MC CYL SAX qPCR	
CW	Gloeostrichia	MC, Woronichinia, diatoms			? mc 8PCR	
HB	Gloeostrichia	Diatoms, Aphaniotomella (3 cells cf)			No	
JB	MC	G. Algae, Aphaniotomella, Dolichospermum			mc 8PCR	
SHADY01	MC	None			mc toxin Yes	
REDD1	MC	Woronichinia, Aphanoascus			? vector 8PCR	
AP01	MC	Gloeostrichia			mc toxin Yes	
LC01	MC	Dolichospermum, Gloeostrichia			mc 8PCR	
		Aphaniotomella, Woronichinia				



10 μm



10 μm

CYANOBACTERIA CELL ID AND ABRAXIS RESULTS SHEET

SITE
NAME

DOMINANT
GENUS

OTHER OBSERVED

MC (ppb) ATX (ppb) CYL (ppb)

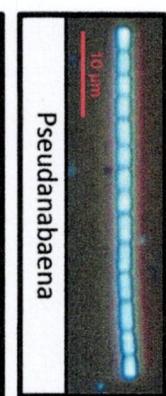
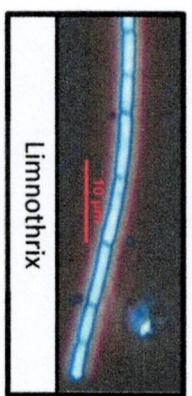
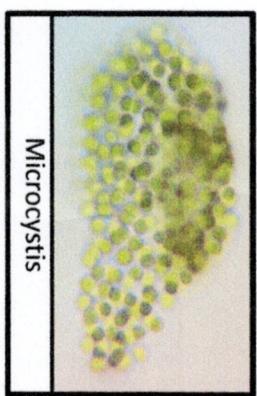
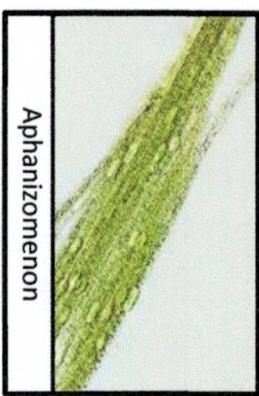
SEND TO LAB?

MICROSCOPY REVIEWERS:

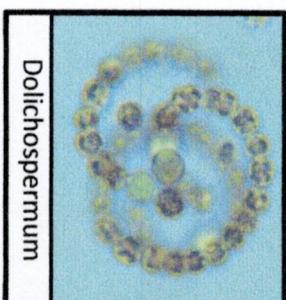
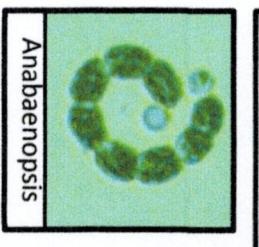
DATE: 6/15/22

Alix Tyler

SBHED	MC	Woronichinia, Aphanizomenon			mc toxin Yes!	
ELEND	MC	None			mc toxin Yes	
MEY03	Aphanocapsa	Diatoms + g. algae			mc toxin No	
CLOPSI	MC	None			mc toxin No	
GH	MC	Woronichinia			mc toxin No	
WUCO1	very small amount of MC	None			mc toxin Yes	
KPO1	MC	Diatoms			mc toxin No	
RODS	G. algae	None			No	
LPTNT	Diatoms	None			No	
Benthic LUCD1	MC	None			mc toxin Yes	



Microcystis



Geitlerinema

Anabaenopsis

**Freshwater Harmful Algal Bloom Monitoring
Request for Analysis and Chain of Custody Record**

Group:		Project Code: HABS317		Sampling Procedures Used:		Sampling Agency: Big Valley Rancheria		Field Sampling Lead: Alix Tyler		Bend Genetics Lab Contact:		(916) 550-1048		Customer service@bendgenetics.com	
Fiscal Year:	21/22	PO:		EventCode:		Field Crew:		Field & Lab Contact:		Field & Lab Contact:		Date & Time	Comments Received by:	Date & Time	
1819	JB	1 14 22	0859	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1820	ELEM01	1 14 22	1059	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1821	LUC01	1 14 22	1250	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1822	REDO1	1 14 22	0945	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1823	SBMHEL01	1 14 22	1115	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1824	AP01	1 14 22	1000	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1825	Benthic LUC01	1 14 22	1250	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1826	BYCLL0	1 14 22	0715	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1827	CP	1 14 22	0733	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1828	CLV7	1 14 22	0752	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1829	BP	1 14 22	0831	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	
1830	SHADY01	1 14 22	0930	120ml	10% diluent / Stored 2-10°C	Grab	Glass PETG			Toxin Analysis	QPCR Analysis	5 6 7 8 9 10	Microscopy	11 12	

Freshwater Harmful Algal Bloom Monitoring
Request for Analysis and Chain of Custody Record

Project Code: HABS/317		Sampling Procedures Used:		Sampling Agency: Big Valley Rancheria		Field Lead: Sarah Ryan		Field Sampling Lead: Alix Tyler		Bend Genetics Lab Contact:				
Group:	Fiscal Year: 21/22	PO:	EventCode:	Station Name	Sample Date	Collection Time	Sample Volume	Field Preservation	Sample Type Code	Sample Container	Remarks			
				LCO1	6 14 22	1022	120ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1831				CLOAKSOI	6 14 22	1159	120ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1832				GH	6 14 22	1221	120ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1833				KP01	6 14 22	1308	120ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1834				LA03	6 13 22	0950	60 ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1835				OA04	6 13 22	1015	60ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1836				CL-1	6 9 22	1133	60 ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1837				CL-3	6 9 22	0934	60ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1838				CL-4	6 9 22	1039	60ml	10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
1839								10% diluent / Stored 2-10°C	Grab / Integrated	Glass / PETG	Toxin Analysis 1 2 3 4	QPCR Analysis 5 6 7 8 9 10	Microscopy 11 12	
Total # sites/bottles: 21												Comments: For each row choose analysis corresponding to # 1 - 12 below		
												1 Microcystins + Nodularin by ELISA, Total fraction measured (no filtering)		5 Microcystin gene, lab analysis includes concentration + extraction per method
												2 Anatoxin-a by ELISA, Total fraction measured (no filtering)		6 Anatoxin-a gene, lab analysis includes concentration + extraction per method
												3 Cylindrospermopsin by ELISA, Total fraction measured (no filtering)		7 Cylindrospermopsin gene, lab analysis includes concentration + extraction per method
												4 Saxitoxin by ELISA, Total fraction measured (no filtering)		8 Saxitoxin gene, lab analysis includes concentration + extraction per method
												5 Nodularin gene, lab analysis includes concentration + extraction per method		9 Nodularin gene, lab analysis includes concentration + extraction per method
												10 Total cyanobacteria, quantifies "cell equivalents/ml", by qPCR		10 Total cyanobacteria, quantifies "cell equivalents/ml", by qPCR
												Samples Received by: Name (Print and Sign) Alix Tyler <i>Alix Tyler</i>		Samples Received by: Name (Print and Sign) Name (Print and Sign)
												Date & Time 6 15 22 @ 2:30pm		Date & Time
														Electronic copy emailed
														Distribution of COC form: Original accompanies shipment, Customer Service@bendgenetics.com

Please mail samples with next day delivery (by 10:30 AM)
 Bend Genetics, LLC
 107 Scripps Drive Ste 210
 Sacramento, CA 95825



Bend Genetics, LLC
107 Scripps Drive, Ste. 210
Sacramento, CA 95825
Tel: (916) 550-1048

Date: 6/23/2022

Subject: Analysis for Toxigenic Cyanobacteria

From: Tim Otten, Laboratory Director

To: Sarah Ryan, Environmental Director
Big Valley Band of Pomo Indians

Testing results are attached for ELISA and QPCR analyses conducted on 21 samples collected between 6/9/2022 and 6/14/2022. All data have been reviewed and are considered final.

Analyses included in this report:

- Quantification of total cylindrospermopsin, microcystin, and saxitoxin producing cyanobacteria by real-time quantitative polymerase chain reaction (QPCR) method.
- Quantification of total microcystin/nodularin by enzyme linked immunosorbent assay (ELISA) method.



Bend Genetics, LLC
107 Scripps Drive, Ste. 210
Sacramento, CA 95825
Tel: (916) 550-1048

Project: Big Valley Rancheria
Analysis for Toxigenic Cyanobacteria
Project #: HABS/317
Reported: 6/23/2022 11:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Location	Date Collected	Date Received	Matrix	Preserved	BG_ID
1819	JB	6/14/2022 8:59	6/16/2022 9:32	Water	N	BV576
1820	ELEM01	6/14/2022 10:59	6/16/2022 9:32	Water	N	BV577
1821	LUC01	6/14/2022 12:50	6/16/2022 9:32	Water	N	BV578
1822	RED01	6/14/2022 9:45	6/16/2022 9:32	Water	N	BV579
1823	SBMMEL01	6/14/2022 11:15	6/16/2022 9:32	Water	N	BV580
1824	AP01	6/14/2022 10:00	6/16/2022 9:32	Water	Y	BV581
1825	Benthic LUC01	6/14/2022 12:50	6/16/2022 9:32	Water	N	BV582
1826	BVCL6	6/14/2022 7:15	6/16/2022 9:32	Water	N	BV583
1827	CP	6/14/2022 7:33	6/16/2022 9:32	Water	N	BV584
1828	CLV7	6/14/2022 7:52	6/16/2022 9:32	Water	N	BV585
1829	BP	6/14/2022 8:31	6/16/2022 9:32	Water	N	BV586
1830	SHADY01	6/14/2022 9:30	6/16/2022 9:32	Water	N	BV587
1831	LC01	6/14/2022 10:22	6/16/2022 9:32	Water	N	BV588
1832	CLOAKS01	6/14/2022 11:59	6/16/2022 9:32	Water	N	BV589
1833	GH	6/14/2022 12:21	6/16/2022 9:32	Water	N	BV590
1834	KP01	6/14/2022 13:08	6/16/2022 9:32	Water	N	BV591
1835	LA03	6/13/2022 9:50	6/16/2022 9:32	Water	N	BV592
1836	OA04	6/13/2022 10:15	6/16/2022 9:32	Water	N	BV593
1837	CL-1	6/9/2022 11:33	6/16/2022 9:32	Water	N	BV594
1838	CL-3	6/9/2022 9:36	6/16/2022 9:32	Water	N	BV595
1839	CL-4	6/9/2022 10:39	6/16/2022 9:32	Water	N	BV596



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SAMPLE RESULTS

Sample ID	Method	Target	Result	Quantitation			Notes
				Limit	Units		
1819	ELISA	Microcystin/Nod.	17.62	0.75	µg/L		Batch 1
1820	ELISA	Microcystin/Nod.	84.21	30.00	µg/L		Batch 2
1821	ELISA	Microcystin/Nod.	0.53	0.15	µg/L		Batch 1
1822	ELISA	Microcystin/Nod.	39.40	7.50	µg/L		Batch 2
1823	ELISA	Microcystin/Nod.	790.0	150.0	µg/L		Batch 2
1824	ELISA	Microcystin/Nod.	6.14	0.75	µg/L		Batch 1
1825	ELISA	Microcystin/Nod.	0.45	0.30	µg/L		Batch 1
1826	QPCR	Microcystin	ND	100	copies/mL		U
1827	QPCR	Cylindrospermopsin	ND	100	copies/mL		U
1827	QPCR	Microcystin	1,813	100	copies/mL		
1827	QPCR	Saxitoxin	ND	100	copies/mL		U
1828	QPCR	Microcystin	1,903	100	copies/mL		
1829	QPCR	Microcystin	6,475	100	copies/mL		
1830	QPCR	Microcystin	171,298	100	copies/mL		
1831	QPCR	Microcystin	3,586	100	copies/mL		
1832	ELISA	Microcystin/Nod.	16.87	3.75	µg/L		Batch 2
1833	QPCR	Microcystin	ND	100	copies/mL		U
1834	QPCR	Microcystin	ND	100	copies/mL		U
1835	ELISA	Microcystin/Nod.	4.38	0.15	µg/L		Batch 1
1836	ELISA	Microcystin/Nod.	2.69	0.30	µg/L		Batch 1
1837	ELISA	Microcystin/Nod.	0.29	0.15	µg/L		Batch 1
1838	ELISA	Microcystin/Nod.	3.45	0.30	µg/L		Batch 1
1839	ELISA	Microcystin/Nod.	2.11	0.30	µg/L		Batch 1



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QUALITY CONTROL

Method	Analyte	Result	Qualifiers / Comments	Units	Spike Level	%REC	%REC Limits
QPCR	cyrA - Blank	ND	U	copies/mL	0		
QPCR	mcyE - Blank	ND	U	copies/mL	0		
QPCR	mcyE - Spike	44,175		copies/mL	50,000	88.4	70-130
QPCR	sxtA - Blank	ND	U	copies/mL	0		
ELISA	MC - Blank	ND	U, Batch 1	µg/L	0		
ELISA	MC - Positive	0.79	Batch 1	µg/L	0.75	104.9	70-130
ELISA	MC - Matrix Sp	0.91	Batch 1	µg/L	1.00	90.6	70-130
ELISA	MC - Blank	ND	U, Batch 2	µg/L	0		
ELISA	MC - Positive	0.81	Batch 2	µg/L	0.75	108.2	70-130
ELISA	MC - Matrix Sp	0.89	Batch 2	µg/L	1.00	88.6	70-130

QUALIFIERS/COMMENTS/NOTES

- C1 The reported concentration for this analyte is below the quantification limit.
- C2 The reported concentration for this analyte is above the calibration range of the instrument.
- J The reported result for this analyte should be considered an estimated value.
- U Undetected